

Applicant : Xiaodong Jin et al.
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Attorney's Docket No.: 13361-058001 / MP0358

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REMARKS

Claims 1, 9, 17, 24, and 31 have been amended. Claims 4, 12, 20, 27 and 33 have been cancelled. The features set forth in claims 4, 12, 20, 27 and 33 have been incorporated into their respective independent claims. No new matter has been added. Applicants respectfully request reconsideration in view of the foregoing amendments and these remarks.

1. Interview

Applicants wish to thank the Examiner for the courtesy of an in-person interview that was conducted on July 11, 2006 in which the Examiner and the undersigned participated. During the interview claims 1 and 4 were discussed along with the Jenkins reference. No agreement was reached.

2. 35 USC 102(e) Rejection

Claims 1-7, 9-15 and 17-36 were rejected under 35 USC 102(e) as being anticipated by Jenkins et al (United States Patent No. 6, 738, 248 and hereinafter referred to as "Jenkins"). Applicants respectfully traverse the rejection.

Claim 1 as amended is directed to a low noise amplifier that includes a radio frequency input, and an electrostatic discharge (ESD) protection circuit that includes a pair of diodes and a ESD clamp. A first diode of the pair has a second terminal that is directly coupled to a first supply. A second diode of the pair has a first terminal that is directly coupled to the first supply. The ESD clamp is separate from the diode pair and directly coupled between high and low voltage supplies and provides a discharge path there through. More specifically, claim 1 requires both direct coupling of Applicants' claimed diode pair terminals to a first supply and a separate electrostatic discharge clamp that is directly coupled between high and low voltage supplies.

Jenkins does not teach or suggest Applicants' claimed direct coupling of a diode pair to a first supply or Applicants' separate ESD clamp. As shown in Jenkin's Figure 3, Jenkins includes a diode pair that includes a first set of terminals coupled to an input of a buffer, and a second set of terminals that is coupled to an intermediary connection (Reference point 304) of Jenkin's clamp (combination of D5 and D6, see Col. 4, lines 44-45). Applicants respectfully assert that

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Jenkin's structure shown in Figure 3 does not teach or suggest Applicants' claimed directly coupled diode pair or separate ESD clamp.

Claims 2-3 and 5-8 depend from claim 1 and are allowable for at least the same reasons set forth above with respect to claim 1.

Claim 9 as amended is directed to a low noise amplifier that includes a receiving means for receiving a radio frequency input, and a shunting means that includes a pair of diode means and a clamping means. A first diode means of the pair has a second terminal that is directly coupled to a first supply. A second diode means of the pair has a first terminal that is directly coupled to the first supply. The clamping means is separate from the diode pair means and directly coupled between high and low voltage supplies and provides a discharge path there through.

Jenkins does not teach or suggest Applicants' claimed direct coupling of a diode pair means to a first supply nor Applicant's separate clamping means. As shown in Jenkin's Figure 3, Jenkins includes a diode pair that includes a first set of terminals coupled to an input of a buffer, and a second set of terminals that is coupled to an intermediary connection (Reference point 304) of Jenkin's clamp (combination of D5 and D6, see Col. 4, lines 44-45). Applicants respectfully assert that Jenkin's structure shown in Figure 3 does not teach or suggest Applicants' claimed directly coupled diode pair means or separate clamping means.

Claims 10-11 and 13-16 depend from claim 9 and are allowable for at least the same reasons set forth above with respect to claim 9.

Claim 17 as amended is directed to an electrostatic discharge protection circuit that includes a pair of diodes and an ESD clamp. A first diode of the pair has a second terminal that is directly coupled to a first supply. A second diode of the pair has a first terminal that is directly coupled to the first supply. The ESD clamp is separate from the diode pair and directly coupled between high and low voltage supplies and provides a discharge path there through.

Claim 17 is allowable for at least the same reasons set forth above with respect to claim 1.

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Claims 18-19 and 21-23 depend from claim 17 and are allowable for at least the same reasons set forth above with respect to claim 17.

Claim 24 as amended is directed to an electrostatic discharge protection circuit and includes a shunting means that includes a pair of diode means and a clamping means. A first diode means of the pair has a second terminal that is directly coupled to a first supply. A second diode means of the pair has a first terminal that is directly coupled to the first supply. The clamping means is separate from the diode pair means and directly coupled between high and low voltage supplies and provides a discharge path there through.

Claim 24 is allowable for at least the same reasons set forth above with respect to claim 9.

Claims 25-26 and 28-30 depend from claim 24 and are allowable for at least the same reasons set forth above with respect to claim 24.

Claim 31 as amended is directed to method for discharging electrostatic discharge that includes: providing a first direct discharge path between an input/output pad and a first supply; providing a second direct discharge path between the input/output pad and the first supply; providing a third discharge path between the first supply and a second supply during an electrostatic discharge event; and shunting electrostatic discharge current during positive and negative electrostatic discharge events through one of the first discharge path and the second discharge path.

Jenkins does not teach or suggest providing two direct discharge paths between an input output pad and a first supply along with a third discharge path between the first supply and a second supply. As discussed above with respect to claim 1, Jenkins shows indirect discharge paths that are tied to an intermediate point of a clamping circuit. For at least this reason and the reasons set forth above with respect to claim 1, Applicants respectfully submit that claim 31 is allowable over Jenkins.

Claims 32 and 34-36 depend from claim 31 and are allowable for at least the same reasons set forth above with respect to claim 31.

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2. 35 USC 103 Rejection

Claims 8 and 16 were rejected under 35 USC 103(a) as being unpatentable over Jenkins. Applicants respectfully traverse the rejection.

Claim 8 depends from claim 1 and is allowable for at least the same reasons set forth above with respect to claim 1.

Claim 16 depends from claim 9 and is allowable for at least the same reasons set forth above with respect to claim 9.

Enclosed is a credit card authorization for the Petition for Extension of Time fee for a response to and including August 8, 2006. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 8 August, 2006

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